

letters. At present, I know of no remedy for these defects, if marble is introduced in situations exposed to the weather.

Within a few years, it has become the practice amongst the wealthy to have sepulchral monuments constructed entirely of marble, either to gratify the vanity of surpassing a humble neighbour, or under the impression of it being the most durable substance. Although marble, when fresh from the workman's hand, is a more beautiful material than common stone, yet it has disadvantages which ought to preclude it from ever being applied to external decorations. When Carrara marble has been exposed to the weather, and to variations of temperature, for thirty or forty years, the crystals no longer adhere firmly to each other; the external appearance as yet remains unaltered, but the decomposing influence of atmosphere continues to penetrate deeply into the mass; the cohesion of the particles is imperceptibly destroyed, and, after the lapse of a century, it entirely falls into a kind of sparkling sand. The group of Queen Anne, &c., in front of St. Paul's Cathedral, executed in Carrara marble by Francis Bird, the beginning of the last century, has long since been painted, in order to preserve it a little longer from total ruin. The statue of George the Third, executed in marble by J. Wilton, R.A., and placed in one of the niches at the old Royal Exchange, was taken down to be repaired, about twenty-five years since, and was found to be too much decomposed to be put up again: it has since actually crumbled to dust. A mural monument, in the utmost state of decay, still exists at the external end, facing the east, of the church of St. Giles's-in-the-Fields. The church itself, built with the best kind of Portland stone, is in a remarkably perfect condition, whereas the monument, made of Carrara marble some years after the completion of the church, is now in such a mouldering state, that it must very shortly fall completely to atoms. Numerous other instances might be named, but it is hoped the above are sufficient to show the unfitness of that description of marble for such purposes.

Many sculptors and masons entertain a high opinion of the durability of Ravaccioni marble, erroneously called Sicilian, of which the arch now in front of Buckingham Palace may be named as a specimen.* There certainly is reason to believe it to be a material likely to resist the action of an English atmosphere longer than Italian veined, or white Carrara marble; but, on attentive examination, it will be found that its chemical and mineralogical character scarcely differs from them, except in weight, hardness, and containing a little more carbonaceous matter. These qualities are by no means sufficient to warrant an idea that the Ravaccioni marble will last considerably longer than such as have heretofore been in general use.

The question may be asked, "why have the Elgin marbles, and other antique sculptures, resisted the mouldering touch of time for more than twenty centuries?" A long and highly interesting article might be written upon this subject; but for the present, suffice it to say that the same elements uniting in the same proportions do not necessarily generate the same body. Common chalk, Carrara marble, and many of the oolitic limestones scarcely present a trace of difference in their chemical composition. To all appearance, the marble of Pentelicus, in the neighbourhood of Athens, is an aqueous deposit, similar to the stalagmites, travertines, and other calcareous formations, constantly operating in the fresh-water currents of Italy; most of which are extremely durable when applied to architectural purposes. Taking many circumstances into consideration, besides observing the progress of decay in Carrara marble, and comparing them with a long series of experiments, undertaken some years back by Sir James Hall, to verify a principle previously assumed by Dr. Hutton, in his "Theory of the Earth," we are induced to believe that Carrara marble, has been materially modified in its crystalline structure, by volcanic agency, acting under an excessive pressure of superincumbent earth, and ex-

cluded from the atmosphere. The same elements are consolidated in one case through the agency of water; and in the other, by the influence of fire; therefore we must expect, that the produce will vary considerably in duration, if subjected to the same atmospheric influences; and the instances already mentioned are quite sufficient to show that Carrara marble is a material wholly unfit to be placed in situations exposed to the weather in this country.

C. H. SMITH.

CHELSEA HOSPITAL GARDENS AND THE RIVER BANKS.

THE instruction and healthful recreation of the dense mass of human beings living in this overgrown metropolis, has been recognised to be one of the duties of national government. The principle has been acted upon to a considerable extent during a few past years, but many of its great capabilities still remain untouched. A good deal of what has been effected has been undertaken by the authoritative powers being urged on by Parliamentary desire, or the pressure from without. To these causes we owe increased accommodation to the British Museum, the National Gallery, Greenwich Hospital, the Tower of London, as well as the laying out of Victoria Park at Bethnal-green, and a proposed new one in Battersea-fields. Parks are, however, of slow growth; and while the trees may grow which are not yet planted in the last-named undertaking, I wish to call attention to great capabilities for healthful enjoyment on the opposite bank of the river at Chelsea.

Of all the suburbs of London where good residences abound, there is not one so ill laid out for main thoroughfares as this locality. The King's-road, leading out of Sloane-square, is obstructed on the south side by the wall of the Royal Asylum, which does not leave space for a footpath even; and opposite it one might imagine a rivalry of obstructions had taken place, each inhabitant endeavouring to push his place of trade to the edge of the kennel. Beyond Church-lane, leading to Battersea-bridge, the same enemy of transit appears to have afflicted the builders. Considerable improvement was effected by making the roadway that traverses the front of Chelsea Hospital; but beyond that, at a little distance, the same inconvenience of a single footpath is occasioned by the wall of the apothecaries' garden, and a narrow dirty lane of irregular houses must be threaded before you can arrive at the fine river terrace of Cheyne-walk.

In the pursuit of this healthful recreation, on the Sunday afternoons of last summer, more than 5,000 persons have landed at the numerous piers on this spot from the river steamers. The majority of these are the quiet respectable persons of the industrious class, with their families. Few but the idle, wicked, and dissolute can venture on the opposite shore, where, on every Sunday in fine weather, a disgraceful saturnalia is held, in defiance of morality and all the decencies that honour existence.

The subject to which it is particularly wished to call attention is Chelsea Hospital with its extensive grounds. Some accommodation is granted by the officials, of a limited character: this seems not generally known; and it would be a great and desirable improvement to increase the means for its free perambulation.

Chelsea Hospital is a great monument of national benevolence. Belonging to the nation, and sustained with pride by a heavily taxed people, they may claim as a public right the tranquil enjoyment of its pleasure grounds. The edifice besides has its internal attraction of the trophies of victorious war. In the chapel are preserved the eagles of Napoleon, captured at Barrosa, Talavera, and Waterloo. In the dining-hall remain the fragments of the standards won at Blenheim, from the proud Louis the Fourteenth, surnamed the "Grand," besides flags of all nations, down to the Chinese, with the dragon banners.

How few have been the visitors to these mementoes of our successes on the battle field, comparatively with the affluence of the curious at Greenwich! The latter appears gay as a palace, with its myriads of strollers, while the Chelsea gardens are melancholy as a cemetery. They are but little frequented, although in a

measure open to the public, but woe to the sprightly child who dares to tread on the verdant turf; that is not privileged to youthful sportiveness; the greater portion is an enclosed preserve where certain happy cows can chew the cud in undisturbed comfort.

The large area on the north of the building, with its umbrageous alleys of horse-chestnut trees, is only penetrated by a few well-dressed individuals,—for this latter qualification is rigorously enforced. The handsome gates opposite the King's-road are constantly locked, and never opened but to the governor or a grandee. The large grass-plats between the alleys are railed off: no human foot ever treads here. Arick of hay in one corner marks conspicuously that the herbage is a perquisite. A stable, with outcast heaps of dung, proclaim the condition of enjoyment possessed by the proprietor of the perquisite.

The grounds on the banks of the river are open much on the same condition, that is, to be well-dressed and keep on the gravel. The principal space abutting on the hospital has a broad walk leading to a terrace on the river side, bordered by dwarfed lime trees. There is no trespassing on the grass here, for a wide ditch on each side, brimful of stagnant water, impedes the attempt; and on the other side the spaces are strongly hedged in for the benefit of the aforesaid happy cows. There is another large space of ground adjoining this formal piece, where a greater freedom is allowed, possibly because the vast sewer that comes down from Knightsbridge runs here open by its side. This portion retains some fine trees, affording shelter from the summer sun, at the expense of inhaling the odour of a tank of mud, about 60 feet long and 30 feet wide, close by the side of the principal walk. It was formerly part of the famed Ranelagh Gardens, and leads down to the mouth of the sewer, where the filthy stream is discharged into the Thames. Here, just on the bank where its languid course becomes changed by a sharp descent into a bustling activity of emitting its foul odours before the river absorbs the precious fluid, several seats are placed, to enable visitors to inhale at their ease an ample store of the anti-olfactory scent.

If the sewers were arched over, an open terrace made to the river, the enclosed spaces thrown open, and the stagnant imitative canals filled up, the gardens of Chelsea Hospital would make, with their present plantations, one of the most beautiful parks on a small scale with which London could be adorned. The good conduct of the people has already been established where any such advantages have been made open to them.

The garden of the Apothecaries' Company is but a few paces off, and contains a variety of rare medicinal plants. Two magnificent cedars, planted in 1653, adorn the grounds, and there would be pleasant frontage to the river, if the cheering, breasting prospect were not completely shut out by two lateral walls on the bank of the stream, where all the refuse and rubbish of the garden is preserved. No stranger is admitted within its gates, excepting he is provided with an especial permission from some member of the corporate body. Yet the garden was a legacy to this society by Sir Hans Sloane, and who can doubt that the munificent bequest was intended to be a public benefit. Another large area, with a grassy lawn, on which stand some noble trees, is adjacent to the hospital grounds, namely, that of the Royal Asylum. How much space do all these offer, if opened in a proper spirit, for exercise and recreation, independent of the mental enjoyment that would arise to the multitude in the contemplation of these various establishments dedicated to science, humanity, and gratitude to the defenders of our country.

EDLER IN LONDON.

CROCKFORD'S CLUB-HOUSE, ST. JAMES'S-STREET, is being scraped down externally, and is about to be decorated internally, for (as we are told) a Militia Club. A correspondent remarks on the improvement to the front of this building, which has several good qualities, that would be made by the addition of a portion or porch. The suggestion is well worth the consideration of those concerned in the building.

* The Italian veined, white statuary, dove-coloured, and Ravaccioni marbles, mineralogically considered, are but slight variations of the same substance: they are all procured from quarries in the immediate neighbourhood of the town or village of Carrara in Tuscany.